

Splenic rupture, liquefaction and infection after blunt abdominal trauma

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DESCRIPTION

A 48-year-old man with no significant medical history presented with increasing abdominal pain for the past week with new fever and chills overnight. The patient suffered a mechanical fall 2 weeks prior to presentation, striking his left flank on a stepping stool from standing but did not seek medical attention due to tolerable discomfort. His laboratory values were significant for leucocytosis ($19 \times 10^9/L$) and lactic acidosis (3 mmol/L). The patient's haemoglobin and haematocrit were within normal limits (14.1 gm/L and 42.9%, respectively). On physical examination, the patient had a soft abdomen with diffuse tenderness (greatest in the left upper quadrant), but no costovertebral or flank tenderness, external signs of trauma or ecchymosis. A CT with intravenous contrast was obtained with non-enhancement of the lower pole of the spleen with an irregular margin related to a subacute traumatic infarct, left lower lobe pulmonary contusion with no associated rib fractures. The unenhanced lower pole of the spleen demonstrated liquefaction with rupture through the lateral capsule and hyperdense layering and fluid tracking along the diaphragm, paracolic gutter and pelvis suspicious for subacute haemorrhage with superimposed infection. Moderate left hydroureteronephrosis without obstructing lesion consistent with chronic ureteropelvic junction obstruction was also identified (figure 1). The patient was given empiric antibiotic coverage and proceeded to the operating room where a midline incision was made for an exploratory laparotomy. Purulent fluid with clotted blood products were evacuated with copious washout performed. No active extravasation was identified from the

spleen. However, significant devitalised splenic tissue was encountered at the site of rupture with an additional purulent fluid collection. A splenectomy was performed at this time. The patient tolerated the procedure well and remained haemodynamically stable with no recurrent fevers postoperatively. His postoperative course was uncomplicated and he was discharged home with continued outpatient urological follow-up to monitor his chronic ureteropelvic junction obstruction and is planned for post-splenectomy vaccination.

The spleen is the most commonly injured intra-peritoneal organ following blunt abdominal trauma.¹ Contrast-enhanced CT is the imaging modality of choice in haemodynamically stable patients, but an ultrasound may be utilised in the acute traumatic setting for a focused assessment with sonography for trauma examination in haemodynamically unstable patients. Haemodynamically stable patients with low-grade blunt splenic injury without evidence of concomitant injury or extravasation may be initially observed. Angiographic embolisation may be attempted in haemodynamically stable patients with CT findings of active contrast extravasation, haemoperitoneum or splenic pseudoaneurysm where available. However, surgery is indicated in patients who become unstable, have high-grade injury, generalised peritonitis or other intra-abdominal issues requiring operative management, such as our patient who required intervention for infectious source control.² Delayed presentation of synchronous splenic rupture, liquefaction and infection are rare complications of blunt abdominal trauma. In a study evaluating 4050 patients with blunt trauma, 15 (4.6%) patients

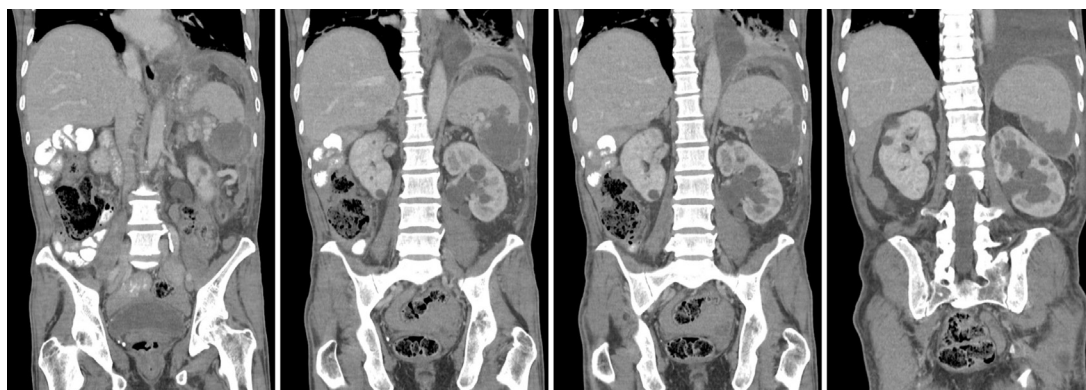


Figure 1 CT with intravenous contrast demonstrating non-enhancing lower pole of the spleen related to a subacute traumatic infarct with liquefaction and rupture through the lateral capsule. There is hyperdense layering and fluid tracking along the diaphragm, paracolic gutter and pelvis suspicious for subacute haemorrhage with superimposed infection. Moderate left hydroureteronephrosis without obstructing lesion consistent with chronic ureteropelvic junction obstruction.



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Learning points

- ▶ Observation is appropriate for patients who sustain splenic injury following blunt abdominal trauma and are haemodynamically stable with no evidence of extravasation.
- ▶ Operative intervention may include angioembolisation or splenectomy.
- ▶ Patients may have delayed presentations following blunt abdominal trauma due to initially inconspicuous symptoms but later seek medical attention due to sequelae of organ injury such as infection or bleeding.

were found to have an intra-abdominal abscess which were most commonly associated with liver and splenic injury.³

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